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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,444	03/08/2002	Naoki Akaboshi	0826.1802	1417
21171	7590	08/27/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			TRUONG, CAM Y T	
			ART UNIT	PAPER NUMBER
			2172	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,444

Applicant(s)

AKABOSHI ET AL.

Examiner

Cam Y T Truong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-20 are pending in this Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 9-11, 20, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008).

As to claims 1 and 20, Hayashi teaches the claimed limitations:

“a designating device designating a search pattern using a plurality of events and relation of a sequence of the plurality of events” as the pattern 2 shows a substructure in which a record of a paragraph of main text is present as a child of record having a section as the value of the field attribute, a record of a drawing area is present as a child, and a record whose attribute is indefinite and a record of an area heading are present as its children, the last mentioned record having a record which is its child. Each search condition such as attribute = section and attribute = paragraph of text of each record is represented as each event. The above information shows that the system designs a pattern by using search condition and relation of a sequence of attributes (fig. 6, col. 6, lines 35-43);

“each of the events defining a particular attribute of a record as a particular value” as attribute = section and attribute = paragraph of text are represented as events that defining each particular attribute of each record (fig. 6, col. 35-50),

“ the relation of the sequence of the events being defined according to an order of attribute values” as the pattern 1 shows a substructure in value of field attribute and a record having a paragraph of main text as the value of the field attribute are present as children of a record having a section as the value of the field attribute, and whatever a substructure may be connected as a child of the record of the heading (col. 6, lines 30-37);

“and an outputting device outputting a searched result” as fig. 13 should also appear as the search result. This information shows that the system has included an outputting device to output the search result as shown in fig. 13.

Hayashi does not explicitly teach the claimed limitation “a searching device searching the set of records for a combination of records corresponding to the designated search pattern”. However, Hayashi teaches that a search result is one, which is a node in the document structure, which satisfies the condition of the attribute in condition 1 specified in the search formula, wherein in the vicinity of that node there is a node, which satisfied the condition of the node attribute shown in condition 2, and that node is present in such a manner as to satisfy the positional relationship stated in condition 3. That is, the search result constitutes one node in the substructure (subtree), which is present in the tree structure of the document and has the same configuration as that of the search formula. The above information implies that the

system searches all documents as records in a tree to find a document corresponding to the search formula or pattern.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Hayashi's teaching of the search results is one of document that satisfies conditions of a search pattern or formula in order to provide events or records following a user's desire or to find all records matching to query patterns quickly.

As to claim 7, Hayashi teaches the claimed limitation "a rewriting device rewriting attribute values of an attribute of the plurality of attributes that have a hierarchical structure, wherein the searching device searches a set of records that have been rewritten" as (col. 7, lines 10-55).

As to claim 9, Hayashi teaches the claimed limitation "wherein the designating device includes a graphic user interface for defining the plurality of events and the relation of the sequence of the plurality of events" as (col. 7, lines 30-60).

As to claim 10, Hayashi teaches the claimed limitation "wherein the outputting device outputs information about the combination of records corresponding to the search pattern" as (fig. 13).

As to claim 11, Hayashi teaches the claimed limitation "wherein the designating device designates a format of the searched result, and wherein the outputting device compiles information about the combination of records corresponding to the search pattern in the designated format and outputs the result" as (col. 10, lines 40-45).

As to claims 17 and 18, Hayashi teaches the claimed limitations:

"designating a search pattern using a plurality of events and relation of a sequence of the plurality of events" as the pattern 2 shows a substructure in which a record of a paragraph of main text is present as a child of record having a section as the value of the field attribute, a record of a drawing area is present as a child, and a record whose attribute is indefinite and a record of an area heading are present as its children, the last mentioned record having a record which is its child. Each search condition such as attribute = section and attribute = paragraph of text of each record is represented as each event. The above information shows that the system designs a pattern by using search condition and relation of a sequence of attributes (fig. 6, col. 6, lines 35-43);

"each of the events defining a particular attribute of a record as a particular value" attribute = section and attribute = paragraph of text are represented as events that defining each particular attribute of each record (fig. 6, col. 35-50),

"the relation of the sequence of the events being defined according to an order of attribute values" as the pattern 1 shows a substructure in value of field attribute and a record having a paragraph of main text as the value of the field attribute are present as children of a record having a section as the value of the field attribute, and whatever a

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substructure may be connected as a child of the record of the heading (col. 6, lines 30-37).

Hayashi does not explicitly teach the claimed limitation "searching the set of records for a combination of records corresponding to the designated search pattern; and outputting a searched result". However, Hayashi teaches that a search result is one which is a node in the document structure which satisfies the condition of the attribute in condition 1 specified in the search formula, wherein in the vicinity of that node there is a node which satisfied the condition of the node attribute shown in condition 2, and that node is present in such a manner as to satisfy the positional relationship stated in condition 3. That is, the search result constitutes one node in the substructure (subtree), which is present in the tree structure of the document and has the same configuration as that of the search formula. The above information implies that the system searches all documents as records in a tree to find a document corresponding to the search formula or pattern.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Hayashi's teaching of the search results is one of document that satisfies conditions of a search pattern or formula in order to provide events or records following a user's desire or to find all records matching to query patterns.

As to claim 19, Hayashi teaches the claimed limitations:

“inputting into a computer a search pattern designated by using a plurality of events and relation of a sequence of the plurality of events” as the pattern 2 shows a substructure in which a record of a paragraph of main text is present as a child of record having a section as the value of the field attribute, a record of a drawing area is present as a child, and a record whose attribute is indefinite and a record of an area heading are present as its children, the last mentioned record having a record which is its child. Each search condition such as attribute = section and attribute = paragraph of text of each record is represented as each event. The above information shows that the system designs a pattern by using search condition and relation of a sequence of attributes (fig. 6, col. 6, lines 35-43);

“each of the events defining a particular attribute of a record as a particular value” as attribute = section and attribute = paragraph of text are represented as events that defining each particular attribute of each record (fig. 6, col. 35-50),

“the relation of the sequence of the events being defined according to an order of attribute values” as the pattern 1 shows a substructure in value of field attribute and a record having a paragraph of main text as the value of the field attribute are present as children of a record having a section as the value of the field attribute, and whatever a substructure may be connected as a child of the record of the heading (col. 6, lines 30-37).

Hayashi does not explicitly teach the claimed limitation “searching the set of records for a combination of records corresponding to the designated search pattern”. However, Hayashi teaches that a search result is one which is a node in the document

structure which satisfies the condition of the attribute in condition 1 specified in the search formula, wherein in the vicinity of that node there is a node which satisfied the condition of the node attribute shown in condition 2, and that node is present in such a manner as to satisfy the positional relationship stated in condition 3. That is, the search result constitutes one node in the substructure (subtree), which is present in the tree structure of the document and has the same configuration as that of the search formula. The above information implies that the system searches all documents as records in a tree to find a document corresponding to the search formula or pattern.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Hayashi's teaching of the search results is one of document that satisfies conditions of a search pattern or formula in order to provide events or records following a user's desire or to find all records matching to query patterns.

4. Claims 2-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008) in view of Elmasri et al (or hereinafter "Elmasri") (US 5440730).

As to claim 2, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the designating device designates a search pattern of which two or more events occurred at a same time in the sequence of the plurality of events". Elmasri teaches that the type of query is list the salary history for

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all employees during the time interval [4,5]. This query is represented as a search pattern of all employees during the time interval [4, 5].

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Elmasri's teaching of the type of query is list the salary history for all employees during the time interval [4,5] to Hayashi's system in order to retrieve all events occurred at the same time in a database quickly.

As to claim 3, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the designating device designates a search pattern of which the relation of the sequence of the plurality of events is described at arbitrary intervals". Elmasri teaches that the type of query is list the salary history for all employees during the time interval [4,5]. This query is represented as a search pattern of all employees during the time interval [4, 5].

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Elmasri's teaching of the type of query is list the salary history for all employees during the time interval [4,5] to Hayashi's system in order to retrieve all events occurred at the same time in a database quickly.

As to claim 4, Hayashi does not explicitly teach the claimed limitation "a generating device collecting a set of records that contain a first attribute and a set of records that contain a second attribute and generating a set of records that contain both the first attribute and the second attribute, wherein the searching device searches

the generated set of records". Elmasri teaches a database contains employee 3 and employee 4. These employees have a first attribute void_time [8,9]

As to claim 12, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the outputting device performs an aggregate operation for the combination of records corresponding to the search pattern and outputs an operation result". Elmasri teaches that the systems perform an aggregate operation for combination of employee corresponding search query for time interval [3,4]. The results of the combined search are the selection of all employees who worked in department B during the time interval [3,4] (col. 7, lines 10-15; col. 8, lines 20-30).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Elmasri's teaching of the systems performs an aggregate operation for combination of employee corresponding search query for time interval [3,4]. The results of the combined search is the selection of all employee who worked in department B during the time interval [3,4] to Hayashi's system in order to return a result corresponding to search condition

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008) in view of Burrows (US 6078923).

As to claim 5, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "a compressing device compressing data of at least one

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of the plurality of attributes so as to compress the data of the set of records, wherein the searching device searches the compressed set of data". Burrows teaches searching compressed records (fig. 2).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Burrows's teaching of searching compressed records to Hayashi's system in order to save memory space.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008) in view of Cheng et al (or hereinafter "Cheng") (US 5204958).

As to claim 6, Hayashi discloses the claimed limitation subject matter in claim 5, except the claimed limitation "a deleting device deleting unnecessary records from the set of records according to the search pattern, wherein the searching device searches rest of the set of records". Cheng teaches deleting records corresponding to a user's request and searching records (col. 12, lines 50-60).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Cheng's teaching of teaches deleting records corresponding to a user's request and searching records to Hayashi's system in order to have enough space for storing a large database with a high data insertion frequency.

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7. Claim 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008) in view of Boyer et al (or hereinafter "Boyer") (US 6269849).

As to claim 13, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the designating device designates an attribute used for sorting records, and wherein the searching device sorts the set of records by values of the designated attribute and searches a set of records that have been sorted". Boyer teaches sorting records based on date and time and searching a set of records (fig. 12).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Hayashi's teaching of sorting records based on date and time and searching a set of records to Hayashi's system in order to provide a list of record following time of a user and announce a user to view records following order.

As to claim 14, Hayashi discloses the claimed limitation subject matter in claim 1, except the claimed limitation "wherein the designating device designates an attribute used for grouping records, and wherein the searching device groups the set of records by values of the designated attribute and sorts records of each group". Boyer teaches sorting records based on date and time and searching a set of records (fig. 12).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Boyer's teaching of sorting records based on date and time and searching a set of records to Hayashi's system in order to provide a list of record following time of a user and announce a user to view records following order.

As to claim 15, Hayshi discloses the claimed limitation subject matter in claim 1, except the claimed limitation “an indexing device used for accessing the set of records according to the order of the attribute values”. Boyer teaches sorting records based on date and time and searching a set of records (fig. 12).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Boyer’s teaching of sorting records based on date and time and searching a set of records to Hayashi’s system in order to provide a list of record following time of a user and announce a user to view records following order.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5628008) in view of Heckerman et al (or hereinafter “Heckerman”) (US 6742003).

As to claim 16, Hayshi discloses the claimed limitation subject matter in claim 1, except the claimed limitation “a group in formation storing device used for accessing the set of records for each group according to values of a predetermined attribute”. Heckerman teaches classifying records based on attributes of records (col. 23, lines 50-55).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Heckerman’s teaching of classifying records based on attributes of records to Hayshi’s system in order to provide meaningful result in a visual fashion that facilitates user discovery and understanding of interrelationship the existing in the data population.

Allowable Subject Matter

9. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 8, the prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited "wherein the designating device designates as a pattern matching method for matching the search pattern and the combination of records, one of a longest match for returning a combination of events whose interval is the longest in combinations of events that match the search pattern, a shortest match for returning a combination of events whose interval is the shortest in combinations of events that match the search pattern, a match for repeating the shortest match, an all match for returning all combinations of events that match the search pattern, a backward longest match for returning a combination of events whose interval is the longest in combinations of events that backwardly match the search pattern, and a backward shortest match for returning a combination of events whose interval is the shortest in combinations of events that backwardly matches the search pattern, and wherein the searching device performs a pattern matching by the designated method".

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holt et al (US 6601061).

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Contact Information


11. inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T Truong whose telephone number is (703) 605-1169. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Cam-Y Truong

8/19/2004


SHAHID ALAM
PRIMARY EXAMINER